REMARKS

The Examiner is thanked for the comments in the Action. They have helped us considerably in understanding the Action and in drafting this Response thereto.

It is our understanding that claims 1-20 remain pending in this application.

5 **We proceed now with reference specifically to the numbered items in the Action.**

Item 1: This appears informational in nature and is understood to require no reply.

Item 2 (IDS):

10 The Examiner has correctly noted that Applicant failed to provide a copy of reference JP 2205870. A copy is provided herewith.

Item 3 (Drawings):

The Action here states *"The drawings are objected to because drawing figures 1-4 depict*

15 *a partial view ..."*. However, FIG. 1-4 do not depict partial views. The Action continues, stating "[a] *box and/or a line drawn around each individual drawing figure is needed to show each individual figure as a separate entity (MPEP* [SIC] *37 CFR 1.84(h))."* Applicant presumes here that the Examiner meant to cite 37 CFR 1.84(h) as authority for the preceding requirement. However, it provides no such authority. Notably, it nowhere uses *"box"* or variants and all uses

20 of "line" or variants are clearly not applicable. Furthermore, in over 100 years of combined experience by the practitioners in undersigned's office we have never encountered such a requirement.

Respectfully, if the requirement is proper here we ask the Examiner to cite some support for it. Otherwise, Applicant asks the Examiner to drop the requirement and save us all the effort

25 of extra amendment that our experience indicates the official draftsperson will reject or regard with disfavor.

Item 4 (Duplicate Claims, Warning):

The Action here states *"should claims 9, 11, 15, and 17 be found allowable, claims 10,*

30 *12, 16, and 18 will be objected to ... as being a substantial duplicate thereof."* Respectfully, this is error.

Claims 9 and 10, 11 and 12, 15 and 16, and 17 and 18 clearly are not literal duplicates. For example, claim 10 depends from claim 9, and claim 11 recites *"are executed at least partially concurrently"* roughly where claim 12 recites *"are executed contiguously."*

These claims are also not substantial duplicates. Claim 9 recites acts so that *"extents …*

5   *are used more efficiently by said plurality of queries"* wherein *"said plurality of queries"* are those received in (a) of parent claim 8. In contrast, claim 10 recites acts so that *"extents … are used more efficiently by other said queries"* wherein *"other said queries"* are queries 'other' than those in *"said plurality of queries."* Accordingly, it has apparently been overlooked that claims 9 and 10 are performing operations on two different things, and that they therefore cannot be

10   substantial duplicates. Similarly, claims 15 and 16 perform operations on these same two different things, and they therefore also cannot be substantial duplicates. Claim 11 recites acts *"executed at least partially concurrently"* whereas claim 12 recites acts *"executed contiguously."* Accordingly, it has apparently been overlooked that claims 11 and 12 are performing operations at two different times, and that they therefore cannot be substantial duplicates. Similarly, claims

15   17 and 18 perform operations at these same two different times, and they therefore also cannot be substantial duplicates.

Items 5-8 (§ 102(b) rejections):

Claims 7-20 are rejected as being anticipated by Das. Respectfully this is error.

20   As a preliminary point, it has apparently been overlooked that Das teaches query optimization, whereas the present invention is directed to buffer cache utilization optimization. Simply put, one way to get results quicker is to optimize the calculations and another way is to optimize the data. Das teaches a version of the first and Applicant claims a version of the second. Das therefore cannot anticipate Applicant's claims 7-20, as we now show.

25   **In item 7**, the Action states *"Das teaches a database system with methods for estimation and usage of index page cluster ratio (iper) and data page cluster ratio (dper)."* Applicant agrees, but urges that one thing that has not been appreciated here is that Das then uses these for query optimization rather than buffer cache utilization optimization.

Using claim 7 as an example, Applicant does not agree with the characterizations in the

30   Action of parts (a)-(b) of this claim, where there has apparently been confusion due to commonality in some elements and terminology in the art. In the interest of brevity, however,

consider the last part of claim 7: "*(c) re-ordering said extents lists based on an order calculated to be more efficient for execution of said plurality of queries.*"

In applying Das to this, the Action states:

> *re-ordering extents lists based on an order (col. 4, lines 48-51, '...the extents in the order of the index rows...', col. 8, lines 57-67, col. 9, lines 1-10 and 13-33) calculated to be more efficient for execution of a plurality of queries (col. 15, lines 17-26); loading extents from a database ordered in extents lists into a buffer cache (col. 8, lines 57-67);*

However, the citations to Das, and nothing else in it that we see, do not support the assertions.

The cite to col. 4, lines 48-51 is clearly wrong. It appears that what was meant is col. 3, ln. 47-50, which is in the Brief Description Of The Drawings section and states "*FIG. 3 is a block diagram illustrating that less I/Os are required if the data pages required to be fetched are well clustered in the extents in the order of the index rows, i.e., if the data page cluster ratio is high.*" But this does not teach or reasonably suggest reordering extent lists. Rather, it says that less I/O is required if extents are already ordered in a particular manner. Reading Das in detail one will see that its invention is to optimize queries to better employ existing particular manners of ordering to achieve less I/O.

The cite to col. 8, ln. 57 through col. 9, ln. 33 similarly does not teach or reasonably suggest anything about re-ordering extents lists. For example, col. 8, ln. 58-61 state "*The [DPCR] for an index ... indicates the order and density of data pages in the extents with respect to the ordering of the index rows.*" This discusses analysis of extents, not changing their ordering. Additionally, this discusses analysis of the order of pages in extents (not of extents) as well as the order of index rows (not of extents). Nothing elsewhere in the cite discusses re-ordering extents. Furthermore, the cite discusses FIG. 3 and 4 (and the paragraph after it discusses FIG. 5) and in these figures it can be seen that the order of the extents are not changed.

The cite to col. 15, ln. 17-26 merely discusses physical I/O estimation and states that its purpose is to "[c]*alculate number of physical I/Os for a search, join or an OR-clause access path for a given range entry.*" As well known, however, "*search*," "*join*," "*OR-clause*," and "*range*" are terms in this art that are relevant to queries and that have no meaning with respect to extents or their ordering. It follows that what Das is teaching here is part of how it calculates query optimization.

The second cite to col. 8, ln. 57-67, discussing "*loading extents from a database ordered in extents lists into a buffer cache,*" does not change any of the above points. Extents are loaded

and then will exist in the cache in some order. However, Das does not teach or reasonably

suggest changing that order to a more optimal one.

   The Action indicates that its same rationale for claim 7 applies also to claims 8, 14, and

20. Applicant agrees, and urges that this rationale is also error for claims 8, 14, and 20, and that

5   all of claims 7, 8, 14, and 20 should be allowed for at least the reasons provided above.

   In item 8, the Action states:

> *Regarding Claims 9-13 and 15-19, Das teaches* [1] *monitoring which*
> *extents are presently in a buffer cache (col. 8, lines 57-67) and* [2] *re-ordering*
> *extents lists* [3] *so that at least some extents (col. 8, lines 57-67) already in a*
> *buffer cache are used more efficiently by a plurality of queries (col. 8, lines 57-*
> *67)*. (identifiers added)

With respect to [1] and [3], Applicant agrees. However, what has apparently been missed here is

that Das teaches [1] to accomplish [3] by use of something other than [2]. Das monitors to

15   perform query optimization, not extent order optimization (that is, it teaches optimizing the

calculations verses optimizing the organization of the data the calculations are performed on).

Das accomplishes efficiency with query optimization, not with extent order optimization. In fact,

as Applicant's specification notes at pg. 14, ln. 2-3, both query optimization and extent

optimization can be used together.

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Items 9-12 (§ 103(a) rejections):

   Claims 1-6 are rejected as being unpatentable (obvious) over Das in view of French.

Respectfully this is error.

   Regarding item 11, Applicant does not agree with the characterizations here in the

25   Action of lines 1-13 of claim 1, where there has apparently been confusion due to commonality

in some elements and terminology in the art. In the interest of brevity, consider the last part of

claim 1, ln. 14-16, which recites: "*a query monitor suitable to re-order said extents lists so that*

said extents that are retrieved and stored in said buffer cache are used more efficiently by said

queries."

30   In applying Das to this, the Action states "[Das teaches] *a query monitor (col. 6, line 56)*

suitable to re-order extents lists so that extents that are retrieved and stored in a buffer cache

used more efficiently by queries (col. 8, lines 57-67)." However, the citations here also do not

support the assertions.

The cite to col. 6, ln. 56 merely contains the heading *"Query Optimization."* The words *"monitor"* and *"optimization"* have quite different meanings, both generally and in this art. It accordingly cannot be seen how the heading *"Query Optimization"* or the act that it implies teaches or reasonably suggests a query monitor element. And since the Action does not assert

5   that French teaches or reasonably suggests a query monitor element, the Action fails to state a *prima facie* case for obviousness based on the combination of Das and French.

Continuing with the cite to col. 8, ln. 57-67, as discussed above in detail for item 7, this does not teach or reasonably suggest anything about re-ordering extents lists. Since the Action does not assert that French teaches or reasonably suggests an element that re-orders extents lists,

10   it follows that the Action fails to state a *prima facie* case for obviousness based on the combination of Das and French.

The Action further states:

> However, Das does not expressly teach a database engine.
> French teaches a database engine (col. 7, lines 35-47).

15   With respect to these two sentence-paragraphs, Applicant agrees. However, since every database environment relevant to Das, French, or Applicant's invention either expressly or impliedly requires an element to perform database engine functions, we urge that merely having an element labeled *"database engine"* or merely *"Engine"* (French at col. 7, ln. 38) is not determinative or even probative. The complete cite to French above merely discusses receiving SQL statements

20   and parsing them into queries. Notably, there is nothing in the cite that teaches or reasonably suggests the four acts/elements/limitations that are recited in ln. 7-13 of claim 1 for Applicant's database engine. For example, the cite says nothing about extents or extent lists (and French nowhere even uses *"extent"* or variants in a manner relevant here). It therefore follows that the Action here also fails to recite a *prima facie* case for obviousness, by omission of any argument

25   or reasonable inference that French's particular engine teaches or reasonably suggests the database engine recited in claim 1.

In item 12, the Action indicates that its same rationale for claim 1 and 7-20 applies also to claims 2-6. Applicant agrees, and urges that this rationale is also error here and that all of

30   claims 1-6 should now be allowed for at least the reasons provided above.

Item 13 (Conclusion – Name of Contact):

This appears informational in nature and is understood to require no reply.

CONCLUSION

5   Applicant has endeavored to put this case into complete condition for allowance. It is thought that the objections have been corrected by the accompanying Information Disclosure Statement and reference, that the §102 rejections have been shown to be unfounded on the prior art reference cited, and that the §103 rejections have been shown to be unfounded on the prior art references cited or have been completely rebutted. Applicant therefore asks that all objections

10   and rejections now be withdrawn and that allowance of all claims presently in the case be granted.

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